

REMARKS/ARGUMENTS

This Amendment is being filed in response to the Final Office Action dated January 5, 2009. Reconsideration and allowance of the application in view of the remarks to follow are respectfully requested.

Claims 1-23 are pending in the Application.

In the Office Action, claims 1, 13-15 and 22 are rejected under 35 U.S.C. §103(a) over Publication entitled "Nonlinear Photoluminescence from Multiwalled Carbon Nanotubes; vol. 4461; pages 56-64; August 2001; to Brennan ("Brennan") in view of U.S. Patent Publication No. 2004/0147037 to Dai ("Dai"). Claims 2-4 are rejected under 35 U.S.C. §103(a) over Brennan in view of Dai in further view of U.S. Patent No. 6,096,496 to Frankel ("Frankel"). Claims 16-17 are rejected under 35 U.S.C. §102(a) over Brennan. Claims 5, 10-12, 21 and 23 are rejected under 35 U.S.C. §103(a) over Brennan in view of Frankel. Claims 6-9 are rejected under 35 U.S.C. §103(a) over Brennan in view of Frankel in further view of U.S. patent No. 7,129,554 to Lieber ("Lieber"). Claim 18 is rejected under 35 U.S.C. §103(a) over Brennan in view of U.S. Patent No. 6,649,946 to Bogner ("Bogner"). Claims 19-20 are

rejected under 35 U.S.C. §103(a) over Brennan in view of U.S. Patent No. 6,514,113 to Lee ("Lee").

The rejection of claims 1-23 is respectfully traversed. It is respectfully submitted that claims 1-23 are allowable over Brennan alone and Brennan in view of Dai alone and in view of any combination of Frankel, Lieber, Bogner and Lee for at least the following reasons.

It is undisputed that Brennan does not "disclose wherein the source of electromagnetic radiation, the at least one photoluminescent carbon nanotube and the detector are together configured to perform an optical signal processing operation of the optical signal processing device." (See, Final Office Action, page 5.) Dai is cited to provide that which is admitted missing from Brennan, however, it is respectfully submitted that reliance on Dai is misplaced. Particularly, Dai, FIG. 6 and paragraphs [0035] and [0042] are cited for providing that which is admitted missing from Brennan however, it is respectfully submitted that reliance on these portions of Dai or any portions of Dai for that matter are misplaced.

"FIG. 6 [of Dai] shows a carbon nanotube circuit arrangement 600 using photodesorption for manipulating properties of a carbon

nanotube ...". (See, Dai, paragraph [0035] and FIG. 6 cited in the Final Office Action.) Dai shows and states that (emphasis added) "a carbon nanotube 620, such as a SWNT, with opposite ends of the carbon nanotube 620 coupled to two electrodes 622 and 624." Dai is clear that (emphasis added) "[a]n electrical characteristic of the carbon nanotube 620 is detected via the circuitry 640 and electrodes 622 and 624. The electrical characteristic is used to identify the type of molecules adsorbed to the carbon nanotube 620, for example, using a change in resistance of the carbon nanotube to detect that a particular type of molecule has been adsorbed thereto." (See, Dai, paragraph [0042] cited in the Final Office Action.) Accordingly, Dai merely detects an electrical characteristic of the carbon nanotube through use of the electrodes 622, 624 and the circuitry 640. As further clear from Dai, the circuitry 640 is not an optical detector.

It is respectfully submitted that the optical signal processing device of claim 1 is not anticipated or made obvious by the teachings of Brennan in view of Dai. For example, Brennan in view of Dai does not disclose or suggest, an optical signal processing device that amongst other patentable elements, comprises (illustrative emphasis added) "an optical component, the optical

component comprising at least one photoluminescent carbon nanotube configured to emit light at wavelengths varying non-linearly with the intensity of said light, and an optical detector of optical electromagnetic radiation, wherein the source of electromagnetic radiation, the at least one photoluminescent carbon nanotube and the optical detector are together configured to perform an optical signal processing operation of the optical signal processing device" as recited in claim 1 and as similarly recited in claim 5.

Each of Frankel, Lieber, Bogner and Lee are introduced for allegedly showing elements of the dependent claims and as such, do nothing to cure the deficiencies in Brennan. Claims 2-4, 6-15 and 22 respectively depend from one of claims 1 and 5 and accordingly are allowable for at least this reason as well as for the separately patentable elements contained in each of the claims. Accordingly, separate consideration and allowance of each of dependent claims 2-4, 6-15 and 22 is respectfully requested.

It is also respectfully submitted that the optical device of claim 16 is not anticipated or made obvious by the teachings of Brennan. For example, Brennan does not disclose or suggest, an optical device that amongst other patentable elements, comprises (illustrative emphasis added) "at least one photoluminescent carbon

nanotube configured to emit, in response to an input of electromagnetic radiation, light over a range that includes wavelengths from 600 to 700 nm, wherein an intensity of emitted light reaches a highest maximum at a wavelength greater than or equal to 600 nm and less than or equal to 700 nm" as recited in claim 16. While the Final Office Action relies on FIG. 2 of Brennan for showing "wherein an intensity of emitted light reaches a highest maximum at a wavelength greater than or equal to 600 nm and less than or equal to 700 nm ..." (see, Final Office Action, page 4), it is respectfully submitted that reliance on the indicated portions of Brennan or any portions for that matter are misplaced. While Brennan does show a peak intensity at 660 nm which it is not disputed is between 600 nm and 700 nm, it is clear from Brennan that the peak intensity at 660 nm is merely a local maximum in that in a wavelength in a range between 800 nm and 900 nm, the intensity of emitted light reaches a maximum intensity that far exceeds the intensity of emitted light in the range between 600 nm and 700 nm.

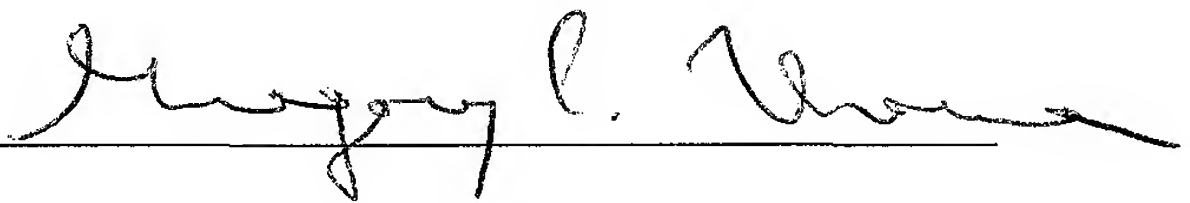
Accordingly, it is respectfully submitted that claim 16 is allowable over Brennan and an indication to that effect is respectfully requested. Claims 17-21 respectively depend from

claim 16 and accordingly are allowable for at least this reason as well as for the separately patentable elements contained in each of the claims. Accordingly, separate consideration and allowance of each of dependent claims 17-21 is respectfully requested.

In addition, Applicants deny any statement, position or averment of the Examiner that is not specifically addressed by the foregoing argument and response. Any rejections and/or points of argument not addressed would appear to be moot in view of the presented remarks. However, the Applicants reserve the right to submit further arguments in support of the above stated position, should that become necessary. No arguments are waived and none of the Examiner's statements are conceded.

Applicants have made a diligent and sincere effort to place this application in condition for immediate allowance and notice to this effect is earnestly solicited.

Respectfully submitted,

By 

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